

IN THE CLAIMS

Please amend the claims of the present application under the provisions of 37 C.F.R. §1.121©), as indicated below:

1. (Canceled)

2. (Canceled)

3. (Canceled)

4. (Currently amended): An apparatus for producing DLC film-coated plastic containers having a bottom portion, a body portion which is located above said bottom portion, and a shoulder portion which is located above said body portion, ~~said apparatus~~ comprising

an outer electrode unit disposed outside a plastic container,

an inner electrode disposed inside said plastic container,

a vacuum unit for reducing the inner pressure of the plastic container,

a gas feeding unit for feeding a raw material gas of a carbon source into said plastic container which has been placed under a vacuum by said vacuum unit,

and a power source unit for applying a voltage between the outer electrode unit and the inner electrode while a carbon source gas is fed into the container, thereby to generate plasma to form a DLC film on an inner surface of the plastic container;

wherein the outer electrode unit comprises a first outer electrode disposed along the bottom portion of the plastic container, a second outer electrode disposed along the body portion of the plastic container, and a third outer electrode disposed along the shoulder portion of the plastic container,

~~and an insulators,~~ or resistive element or capacitive elements are interposed between each of the outer electrodes, to prevent the flow of direct electric current and seal the outer electrodes,

and an output terminal of a high frequency oscillator is connected to only the first outer electrode via a matching transformer.

5. (Currently amended): An apparatus for producing DLC film-coated plastic containers having, a bottom portion, a body portion which is located above said bottom portion, a body portion, a bottom portion and a shoulder portion which is located above said body portion ~~said apparatus~~ comprising

an outer electrode unit disposed outside a plastic container,
 an inner electrode disposed inside the plastic container,
 a vacuum unit for reducing the inner pressure of the plastic container,
 a gas feeding unit for feeding a raw material gas of a carbon source into the plastic container which has been placed under a vacuum by said vacuum unit, and
 a power source unit for applying a voltage between the outer electrode unit and the inner electrode while a carbon source gas is fed into the container, thereby to generate plasma to form a DLC film on an inner surface of the plastic container;

wherein the outer electrode unit comprises a first outer electrode disposed along the bottom portion of the plastic container, a second outer electrode disposed above the first outer electrode and outside of the plastic container, and at least two other outer electrodes disposed above the second outer electrode and outside of the plastic container,

~~and an insulator, or~~ resistive or capacitive elements are interposed between each of the outer electrodes, to prevent the flow of direct electric current and seal the outer electrodes,

and an output terminal of a high frequency oscillator is connected to only the first outer electrode via a matching transformer.

6. (Canceled)

7. (Canceled)

8. (Currently amended): A method for producing DLC film-coated plastic containers having a bottom portion, a body portion which is located above said bottom portion, and a shoulder portion which is located above said body portion, comprising the steps of:

disposing a first outer electrode, having an upper edge, outside a plastic container and at the bottom of the plastic container where it extends upwardly along sides of said plastic container in such a manner that said upper edge of the first outer electrode is positioned between the top and the bottom of the plastic container; disposing a second outer electrode outside the plastic container and extending upwardly along the body of said plastic container; interposing ~~the an insulator or a~~ resistive or capacitive ~~elements~~ element, which also serves as a sealing material, between the first outer electrode and the second outer electrode to prevent the flow of direct electric current;

disposing an inner electrode inside the plastic container and then creating a vacuum inside the plastic container, then feeding a raw material gas of a carbon source into the plastic container, and applying a voltage between the first and second outer electrodes and the inner electrode thereby to generate plasma to form a DLC film on the inner surface of the plastic container by providing a high-frequency electric power to only the first outer electrode, wherein lower power is applied to the second outer electrode than to the first outer electrode by capacitive coupling.

9. (Currently amended): A method for producing DLC film-coated plastic containers having a bottom portion, a body portion which is located above said bottom portion, and a shoulder portion which is located above said body portion, ~~which comprises~~ comprising the steps of:

disposing a first outer electrode outside a plastic container and along the bottom portion of the plastic container,

disposing a second outer electrode outside the plastic container and along the body portion of the plastic container,

disposing a third outer electrode outside the plastic container and along the shoulder portion of the plastic container,

interposing ~~insulators, or~~ resistive or capacitive elements, which also serves as a sealing material, between the first outer electrode and the second outer electrode each of the outer electrodes to prevent the flow of direct electric current, disposing an inner electrode inside the plastic container, creating a vacuum in the plastic container, then feeding a raw material gas of a carbon source into the plastic container, and applying a voltage between the first, second and third outer electrodes and the inner electrode thereby to generate plasma to form a DLC film on the inner surface of the plastic container by providing a high-frequency electric power to only the first outer electrode.

10. (Currently amended): A method for producing DLC film-coated plastic containers, having a bottom portion, a body portion which is located above said bottom portion, and a shoulder portion which is located above said body portion, which comprises comprising the steps of: disposing a first outer electrode outside a plastic container and along the bottom portion of the plastic container, disposing a second outer electrode outside the plastic container and above the first outer electrode,

disposing at least two additional outer electrodes outside the plastic container and above the second outer electrode, interposing ~~insulators, or~~ resistive or capacitive elements, which also serves as a sealing material, between the first outer electrode and the second outer electrode, each of the outer electrodes to prevent the flow of direct electric current, disposing an inner electrode inside the plastic container, creating a vacuum in the plastic container, then feeding a raw material gas of a carbon source into the plastic container, and applying a voltage between the first and second outer electrodes combined with at least two other outer electrodes above the second outer electrode, and the inner electrode thereby to

generate plasma to form a DLC film on the inner surface of the plastic container by providing a high frequency electric power to only the first outer electrode.

11. (Currently amended): The method for producing DLC film-coated plastic containers as claimed in claim 9 or 10, wherein lower power is applied to the outer electrodes other than the first outer electrode by capacitive coupling.

12. (Canceled)

13. (Canceled)

14. (Canceled)

15. (Canceled)

16. (Canceled)

17. (Canceled)

18. (Canceled)

19. (Canceled)

20. (Previously presented): The apparatus for producing DLC film-coated plastic containers as claimed in claims 4 or 5, wherein the high-frequency electric power is imparted to the second outer electrode by capacitive coupling.

21. (Previously presented): The apparatus for producing DLC film-coated plastic containers as claimed in claims 4 or 5, wherein the high- frequency electric power is imparted to the outer electrodes other than the first outer electrode by capacitive coupling.
22. (Currently amended): The apparatus for producing DLC film-coated plastic containers as claimed in claims 4 [[,]] or 5[[or 20,]] wherein ~~the insulator or~~, resistive or capacitive elements are formed to have a thickness through which the high-frequency electric power is able to be imparted to the outer electrode other than the first outer electrodes by capacitive coupling.
23. (Previously presented): The method for producing DLC film-coated plastic containers as claimed in claim 9 or 10, wherein the high-frequency electric power required for each portion of the container other than the bottom portion is imparted by capacitive coupling.
24. (Canceled)
25. (Canceled)
26. (Canceled)
27. (Canceled)
28. (Canceled)
29. (Canceled)

30. (New): A DLC film-coated plastic container having DLC film formed on the inner surface thereof, wherein the DLC film has a thickness of 319 Å with a standard deviation of 102.6 Å and a density of 1.42g/cm³ with a standard deviation of 0.04g/cm³ over a single product.

31. (New): The plastic container as claimed in claim 30, which is formed by integral molding.

32. (New): The DLC film-coated plastic containers having a DLC film all over the inner surface, wherein the DLC film formed on the inner surface of the bottom portion of the plastic container has a thickness of from 215 to 304 Å, a hydrogen content of from 24.1 to 39.1 hydrogen atomic % and density of from 1.48 to 1.59 g/cm³ over a single product.

33. (New): A DLC film-coated plastic container having DLC film formed on the inner surfaces thereof, which is produced by the method according to claim 8, 9, 10 or 11.